

UNCLASSIFIED *M* PROCESSING DATE--03JUL70
TITLE--REACTION OF TETRACALCIUM ALUMINOFERRITE WITH SODIUM METASILICATE IN
A SODIUM CHROMATE SOLUTION -U-
AUTHOR--RYABIN, V.A., MLKASHEVA, G., MIRCLYUCOV, B.V.

COUNTRY OF INFO--USSR

SOURCE--Zh. Prikl. Khim. (Leningrad) 1970, 43(1), 32-5

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ACIDUS SOLUTION, CHEMICAL SEPARATION, CHROMATE, SILICATE,
ALUMINUM COMPOUND, FERRITE, SODIUM COMPOUND, HYDROLYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
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23
5
28

Acc. Nr.

AP0046123

Abstracting Service: 540
CHEMICAL ABST.

Ref. Code

2480080

92460n Reaction of tetracalcium aluminoferrite with sodium metasilicate in a sodium chromate solution. Mirolyubov, B. V.; Ryabin, V. A.; Mukasheva, G. (Ural. Nauch.-Issled. Khim. Inst., Sverdlovsk, USSR). Zh. Prikl. Khim. (Leningrad) 1970, 43(1), 32-5 (Russ). When chromate is leached from melts by water or Na_2CrO_4 solns., insol. hydrated Ca chromate-aluminate (I) forms because of hydrolysis of tetracalcium aluminoferrite (II). Na_2SiO_3 (≥ 1.5 g/l. SiO_2 in soln.) prevents the formation of I by slowing the hydrolysis of II. Most of the Na_2SiO_3 remains in soln. The Na_2SiO_3 must be present in the leach solns. before leaching begins; it has no effect on chromate leaching after I has formed.

Mary Frances Richardson

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REEL/FRAME
19781200

18

1/2 029 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--THE CONTENT OF AMMONIUM GLUTAMINE AND UREA IN THE CEREBRAL TISSUES
OF SUSLIKS (CITELLUS PYGMEUS PALLAS) IN A STATE OF HIBERNATION -U-
AUTHOR-(02)-EMIRBEKOV, E.Z., MUKAILOV, M.I. *M*

COUNTRY OF INFO--USSR

SOURCE--BYULLETEN' EKSPERIMENTAL'NOY BIOLOGII I MEDITSINY, 1970, VOL 69,
NR 4, PP 64-66
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--UREA, BRAIN, HIBERNATION, EXPERIMENT ANIMAL, CEREBELLUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1989/1583

STEP NO--UR/0219/70/069/004/0064/0066

CIRC ACCESSION NO--AP0106329

UNCLASSIFIED

2/2 029

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0106329

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DURING HIBERNATION IN CITELLUS
PYGMEUS PALLAS (BODY TEMPERATURE 3-5DEGREESC) THE CONTENT OF AMMONIUM IN
THE LARGE CEREBRAL HEMISPHERES AND CEREBELLUM SHARPLY RISES, THE LEVEL
OF UREADECLINES (FIVE DAY OBSERVATION). THE CONTENT OF GLUTAMINE IN THE
LARGE CEREBRAL HEMISPHERES AND CEREBELLUM INCREASES FROM THE SECOND DAY
OF HIBERNATION.

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UNCLASSIFIED

USSR

UDC: 621.762.5(088.8)

MIKHA, I. M., DOVBISHCHUK, M. A., KAL'NENKO, B. I., BELILOVETS, A. D.

"Method of Sintering of Metal Ceramic Products"

USSR Author's Certificate Number 353793, Filed 10/02/70, Published 30/10/72
(Translated from Referativnyy Zhurnal Metallurgiya, No 8, 1973, Abstract
No 8G403).

Translation: A method is suggested for sintering metal ceramic products, including heating in a controlled gas atmosphere. In order to reduce the sintering cycle and increase product quality, they are heated by a glowing gas discharge.

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USSR

MUKHA, I. M., DOVBISHCHUK, M. N., BELILOVETS, A. D., VYSHNEVSKIY, V. S., Kiev

"Strength of Welded Joints of VK Hard Alloys as a Function of the Thickness of the Interstitial Layer and the Technological Process of Applying It"

Kishinev, Elektronnaya obrabotka materialov, No 5 (47), 1972, pp 26-30

Abstract: A study was made of the technological procedures for applying Ni and Co interstitial layers for diffusion welding of VK type hard alloys in glow discharge and also the effect of the thickness of the interstitial layers on the strength of the welded joint. Interstitial layers made of powdered Ni and Co can be used for surface ground parts made of hard alloys. Interstitial layers in the form of thin films obtained by thermal evaporation in a vacuum can be used for welding parts of complex surface curvature. The optimal film thickness is 4,000 to 8,000 Å. The variation in strength of the welded joints of VK6-VK16 hard alloys is plotted as a function of the thickness of the Co and Ni interstitial layers from 2,000 to 40,000 Å.

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USSR

UDC 621.791.012

SAMSONOV, G. V., MUKHA, I. M., DOVBISHCHUK, M. N., and KAL'NENKO, B. I.,
Kiev

"The Effect of Heating by Glow Discharge on the Physico-Chemical Surface
Condition of Solid Alloys"

Kishinev, Elektronnaya Obrabotka Materialov, No 5 (35), 1970, pp 32-38

Abstract: The effect of ionic heating on the physico-mechanical surface properties of solid alloys of the type VK (VK2, VK6, VK8, VK15, and VK20) and TK (T5K10, T15K6, and T30K4) and tungsten and titanium carbides during diffusion welding in a glow discharge is demonstrated. An analysis is presented of the variation of the chemical composition of surface layers as a function of the energy condition and the electron structure of the heated materials.

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1/2 025 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--THEORY AND TECHNOLOGY OF PRODUCING THE MATERIALS OF ELECTRODE TOOLS
FOR ELECTROEROSION MACHINING. 4. STRUCTURAL AND PHASE COMPONENTS OF
AUTHOR--SAMSONOV, G.V., MUKHA, I.M., GLOBA, L.V.

COUNTRY OF INFO--USSR

SOURCE--POROSH. MET. 1970, 10(1), 71-5

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--ELECTRON MICROSCOPY, ELECTROEROSION MACHINE TOOL, TOOL STEEL,
CRYSTAL STRUCTURE, TUNGSTEN CARBIDE, COBALT, COPPER/NIICK ALLOY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1989/0588

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2/2 025

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0107185

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. THE STRUCTURES OF THE COMPNS. WERE STUDIED, FOR THE BASES OF WHICH SERVED THE WASTES OF THE VK TYPE SOLID ALLOYS CONTG. CU, NI, AND BN ADDNS. AN ELECTRON MICROSCOPE AT MAGNIFICATIONS OF 100-1150X WAS USED FOR THIS STUDY. MICROSECTIONS WERE EXAMD. BOTH BEFORE AND AFTER ETCHING. THE NO. OF CU INCLUSIONS IN WC,CO,CU COMPNS. AND THEIR SIZES INCREASE WITH THEIR INCREASING CONTENT IN THE ALLOYS. THE HIGH EROSION STABILITY OF WC,CO,CU,BN COMPNS. CAN BE EXPLAINED BY THE FORMATION OF A PECULIAR HONEYCOMBED STRUCTURE, IN WHICH THE LOW MELTING CU AND CO ARE ENCLOSED IN THE REFRACTORY BN CELLS. THE HIGH EROSION STABILITY OF THE MATERIAL MADE OF CU WITH ADDN. OF 2-3 WT. PERCENT BN IS GENERALLY ASSOCD. ALSO WITH THE EXTINGUISHING OF THE ARC BY THE VAPORS OF THE EASILY DISSOCG. BN. IT IS OBVIOUS THAT THIS TAKES PLACE ALSO WHEN SUCH MATERIAL IS EMPLOYED FOR ELECTRODE TOOLS.

UNCLASSIFIED

USSR

UDC 539.12.08:621.039.564

MUKHACHEV, B. V., NEVEROV, V. A., and SAMOYLOV, P. S.

"Measuring Gamma-Radiation Fields in Reactor Channels and the Assembly of Worked-Out Fuel Elements With the Help of an Instrument for Measuring the Exposure Dose Rate on the Base of the Ionization Chamber"

Tr. Soyuz. NII Priborostr. [Works of the All-Union Scientific Research Institute of Instrument Making], 1972, No 17, Pp 56-62 (from Referativnyy Zhurnal, No 8, Aug 72. 50. Yadernyye Reaktory. Single Issue. Abstract No 8.50.151)

Translation: The sensitivity of ionization chambers (IC) to neutrons of different energies was evaluated. The sensitivity of IC to neutrons with 2.4 and 15 Mev energy was determined on a neutron generator of HG-200 type. Averaged over five specimens, IC sensitivities of M-type equal $(2.3 \pm 0.8) \cdot 10^{-19}$ and $(7.8 \pm 0.5) \cdot 10^{-19} \frac{a}{\text{neutr}/(\text{cm}^2 \cdot \text{sec})}$; of B-type they equal $(2.7 \pm 0.5) \cdot 10^{-19}$ and $(10.1 \pm 3.8) \cdot 10^{-19} \frac{a}{\text{neutr}/(\text{cm}^2 \cdot \text{sec})}$. The upper sensitivity limit of B-type IC to thermal neutrons, measured on the SM-2 nuclear reactor, equals

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MUKHACHEV, B. V., et al., Tr. Soyuz. NII Priborostr., 1972, No 17, pp 56-62

$3 \cdot 10^{-19} \frac{a}{\text{neutr}/(\text{cm}^2 \cdot \text{sec})}$. The sensitivities to γ -radiation with 1.25 Mev energy are, for IC of M- and B-types, $(1.36 \pm 0.11) \cdot 10^{-9}$ and $(1.56 \pm 0.08) \cdot 10^{-9}$

$\frac{a}{r/\text{sec}}$. The derived evaluations made it possible to measure the exposure

dose rate P_{γ} of γ -radiation in channels of the SM-2 nuclear reactor. Upper-level distributions of P_{γ} for channels No 16 and 111K and for the assembly of worked-out fuel elements are presented. The P_{γ} drop in time was measured in the No 16 channel center at instantaneous shut-down of the nuclear reactor.

USSR

UDC 539.122.074

MUKHACHEV, B. V., PUSHKAREV, A. V., SAMOYLOV, P. S.

"Vacuum Radiation Elements for Measurement of High Intensity γ Radiation Exposure Dose"

Tr. Soyuz. NII Priborostr. [Works of Union Scientific Research Institute for Instrument Building], 1972, No 17, pp 63-71, (Translated from Referativnyy Zhurnal, Metrologiya i Izmeritel'naya Tekhnika, No 7, 1972, Abstract No 7.32.1403).

Translation: The design, calibration and results of testing of vacuum radiation γ elements for measurements of high-intensity γ radiation exposure doses, requiring no external power supplies, are described. The diameter of the sensing portion of the γ element is 6 mm, length 150 mm. It is shown that the sensitivity of γ elements is higher, the greater the difference in atomic numbers of the emitter and (stainless steel) collector materials. The sensitivity of the γ elements with emitters of zirconium and tantalum are $1.5 \cdot 10^{-13}$ and $6 \cdot 10^{-13}$ A/R/s respectively. Results are presented from tests of γ elements in the SM-2 reactor. It is shown that γ elements can be used between 10^3 and 10^6 R/s at temperatures

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MUKHACHEV, B. V., et al., Tr. Soyuz. NII Priborostr., 1972, No 17, pp 63-71

of up to 500°C. The output signals of the γ elements are proportional to the reactor power and are independent of temperature, while the resistance of the insulation of the γ element under actual operation conditions is at least 10^7 ohm.

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USSR

UDC: 621.165.175.001.5

METELIN, Yu. P., MUKHACHEV, G. A.

"Some Results of an Experimental Study of the Process of Condensation of Water Vapor in a Laval Nozzle"

Tr. Vses. nauchno-tekhn. konferentsii po termodinamike. Leningr. tekhnol. in-t kholodil'n. prom-sti (Works of the All-Union Scientific and Technical Conference on Thermodynamics. Leningrad Technological Institute of the Refrigeration Industry), Leningrad, 1970, pp 155-160 (from 3Zh-Turbostroyeniye, No 8, Aug 70, Abstract No 8.49.23)

Translation: The kinetics of condensation of superheated steam is studied on fourteen flat transparent models of a Laval nozzle of various profiles. Visual observation and photography revealed the qualitative flow pattern, and gave a basis for explaining the blurred boundaries for transition to the region of condensation, which depend on the input parameters of the flow and the nozzle profile. Measurements of the static pressure along the channel made it possible to determine the amount of supercooling (super-saturation) of the steam, and to estimate the effect of condensation on the flow parameters in the form of characteristic curves for the variation in

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USSR

METELIN, Yu. P., MUKHACHEV, G. A., Tr. Vses. nauchno-tekhn. konferentsii po termodinamike. Leningr. tekhnol. in-t kholodil'n. prom-sti, Leningrad, 1970, pp 155-160

static pressure, and the dimensions and location of the transition zone with respect to the length of the nozzle. Empirical relationships are proposed for determining the location of the zone of condensation and the mass fraction of moisture as time changes. Optical measurements (determination of the coefficient of scattering of the two-phase medium) were used to find the change in dimensions and the concentration of drops lengthwise of the nozzle, which agrees satisfactorily with the classical liquid-drop theory of nucleation. Two illustrations, bibliography of six titles. L. F. Kalistova.

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USSR

METELIN, YU. P., MUKHACHEV, G. A.

"Some Results of an Experimental Study of the Process of Water Vapor Condensation in a Supersonic Nozzle"

Tr. Vses. nauchno-tekhn. konferentsii po termodinamike. Leningr. tekhnol. in-t kholodiln. prom-sti (Works of the All-Union Scientific and Technical Conference on Thermodynamics. Leningrad Technological Institute of the Refrigeration Industry), Leningrad, 1970, pp 155-160 (from RZh-Mekhanika, No 11, Nov 70, Abstract No 11B461)

Translation: Experimental studies of the kinetics of condensation of supercooled vapor were performed in Laval nozzles of different shape with flat transparent walls. The condensation process was investigated by three methods: visual observation and photography, measurement of the static pressure along the channel and by the optical method by means of which the dispersion coefficient of two-phase medium was measured. The curves for variation of the static pressure, drop size and mass fraction of moisture along the length of the nozzle are presented. It is noted that the beginning of condensation is characterized by the variation of the static pressure curve, and the moisture drop size and drop concentration

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USSR

METELIN, YU. P., et al., Tr. Vses. nauchno-tekhn. konferentsii po termodynamike. Leningr. tekhnol. in-t kholodiln. prom-sti (Works of the All-Union Scientific and Technical Conference on Thermodynamics, Leningrad Technological Institute of the Refrigeration Industry), Leningrad, 1970, pp 155-160

essentially depend on the saturation state parameters. The results obtained (with respect to number of drops) agree satisfactorily with the classical drop theory of nucleation.

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USSR

UDC: 621.319.4-416

VOROB'YEV, G. A., MOTOSHKIN, V. V., MIKHACHEV, V. A., MIKHACHEVA, N. S.

"On the Mechanism of Breakdown of Thin-Film Capacitors at High Frequencies"

Moscow, Radiotekhnika i Elektronika, Vol 16, No 1, Jan 71, pp 210-211

Abstract: A preliminary investigation is made of the frequency dependence of the electric strength of thin-film capacitors. It is found that the breakdown voltage of thin-film capacitors remains constant up to a frequency of about 600 kHz. At higher frequencies, the puncture voltage drops sharply. The loss tangent decreases with increase in frequency in the 1-100 kHz. range.

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USSR

UDC: 621.319.4-416

VOROB'YEV, G. A., MOTOSHKIN, V. V., MUKHACHEV, V. A., MUKHACHEVA, N. S.

"On the Mechanism of Breakdown of Thin-Film Capacitors at High Frequencies"

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USSR

UDC 547.241

MUKHACHEVA, O. A., NIKOLAYEVA, V. G., SHCHELKUNOVA, M. A., and RAZUMOV, A. I.,
Kazan' Chemical Technological Institute Imeni S. M. Kirov

"Studies in the Series of Phosphinic and Phosphinous Acid Derivatives. XCI.
O-Alkyl- and O-Acyl- Derivatives of the Phosphorylated Hydroxamic Acids"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 6, Jun 73, pp 1240-1247

Abstract: Alkylation and acylation of the potassium salts of dialkyl (diacyl) phosphinylhydroxamic acids yields O-alkyl or O-acyl derivatives of the mother compounds. The structure of the compounds obtained was supported by IR spectral data. Possible reaction mechanisms have been discussed. A series of potassium, silver, cobalt, nickel, and copper salts of O-acyl derivatives of the phosphorylated hydroxamic acids has been synthesized.

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USSR

UDC 547.241

MUKHACHEVA, O. A., NIKOLAYEVA, V. G., and RAZUMOV, A. I., Kazan' Institute of Chemical Technology imeni S. M. Kirov

"Rearrangement of Diphenylphosphinylacetohydroxamic Acid"

Leningrad, Zhurnal Obshchey Khimii, Vol 41, No 8 Aug 71, pp 1873-1874

Abstract: Using diphenylphosphinylacetohydroxamic acid as an example, the authors studied the Lossen rearrangement, which is characteristic of acyl derivatives of hydroxamic acids. Benzoylation of potassium diphenylphosphinylacetohydroxamate gives benzoyl diphenylphosphinylacetohydroxamate, which on heating in an alkaline aqueous solution undergoes an intramolecular rearrangement with elimination of the carboxyl ion and the formation of an isocyanate. The latter gives *N,N'*-bis(diphenylphosphinylmethyl)urea in the presence of water. The rearrangement of diphenylphosphinylacetohydroxamic acid directly to the isocyanate was observed on heating with excess triethyl orthoformate. The final rearrangement products were *N,N'*-bis(diphenylphosphinylmethyl)urea and the ethyl ester of *N*-diphenylphosphinylmethylcarbanic acid.

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USSR

UDC 547.241

NIKOLAYEVA, V. G., ANISIMOVA, L. V., MUKHACHEVA, O. A., and RAZUMOV, A. I.,
Kazan' Chemical-Technological Institute Imeni S. M. Kirov

"Studies in the Series of Phosphinic and Phosphinous Acid Derivatives LXXXIX.
Structures and Properties of Phosphorylated Hydroxamic Acids and Their Salts"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 5, May 73, pp 1013-1019

Abstract: A series of phosphorylated hydroxamic acids and salts was synthesized by a previously described method. Physical constants, IR, UV, and PMR data are reported for the new compounds. On the basis of spectral analysis it was shown that the solid phosphorylated hydroxamic acids and their salts are in the amide form $R_2P(=O)(CHX)_nC(=O)NHOH$.

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USSR

UDC 547.241

MUKHACHEVA, O. A., GOR'KOVA, S. A., NIKOLAYEVA, V. G., RAZUMOV, A. I., Kazan' Chemical-Technological Institute imeni S. M. Kirov, Kazan, Ministry of Higher and Secondary Specialized Education RSFSR

"Studies in the Series of Phosphinous and Phosphinic Acids. LXII. Phosphorylated Hydroxamic Acids"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 9, Sep 70, pp 2004-2009

Abstract: The following method was developed for synthesis of phosphorylated hydroxamic acids. Hydroxylamine hydrochloride was suspended in absolute methanol, and potassium methoxide was added with stirring. After removing the precipitated KCl, a methanol solution of ethyl ester of β -diethylphosphinylpropionic acid was added, followed by more potassium methoxide to keep the pH at 9-10. The reaction was carried out in dry nitrogen atmosphere. After 10 hrs some crystalline potassium salt of the β -diethylphosphinylpropionhydroxamic acid was obtained, the remaining product staying in solution. Next, the ion exchange resin KB-4 was added to the above mixture, which was allowed to stand for 6-7 hrs until the pH 1/2

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MUKHACHEVA, O. A., et al, Zhurnal Obshchey Khimii, Vol 40, No 9, Sep 70, pp 2004-2009

became < 7 . The resin was filtered off, most of the solvent evaporated, and the residue poured into ether, from which crystalline β -diethylphosphinylpropionohydroamic acid was obtained, m.p. 106-107°. Other analogues were obtained in a similar fashion. Their IR spectra showed bands at 1680-1665 and 1650-1640 cm^{-1} (C=O), 1565-1540 cm^{-1} (NH), 1180-1140 cm^{-1} (P=O), and at 3170-3140 cm^{-1} (NH and OH). Introduction of the phosphoryl group did not change basic properties of hydroxamic acids. Biologically, they appeared as weak antidotes against phosphorus organic toxins. The authors thank L. A. CHEMODANOVA for taking the IR spectra.

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USSR

UDC: 539.3

MUKHADZE, L. G., SEKHNIASHVILI, M. L.

"Calculating Three-Dimensional Suspension Systems of Minimum Volume"

V sb. Stroit. mekh. prostranstven. konstruktsiy (Structural Mechanics of Three-Dimensional Constructions--collection of works), Tbilisi, "Metsniyereba", 1972, pp 65-70 (from RZh-Mekhanika, No 9, Sep 72, Abstract No 9V140)

Translation: The optimum configuration of the surface and contour of three-dimensional guying systems is selected. The expression for the volume of the surface and the contour is taken as the minimizing functional. Two forms of equilibrium of three-dimensional suspension systems are considered: under the effect of exclusively prestressing forces on the system, and when the prestressed surface is subjected to a calculated uniformly distributed load. Integrodifferential equations are derived which relate the static and physical-geometrical ratios of the problem, and also a functional of the volume expressed in terms of the maximum values of the forces acting in the surface with an orthogonal guy network, as well as in terms of the corresponding conditions acting in the contour.

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USSR

MUKHADZE, L. G., SEKHNIASEVILI, M. L., Stroit. mekh. prostranstven. konstruksiy, Tbilisi, "Metsniyereba", 1972, pp 65-70

For the special case where the configuration of the contour follows the direction of the coordinate axes, and consists itself of two girders of rectangular cross section, a system of resolving integrodifferential equations is found for the formulated problem. Yu. P. Kitov.

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UDC 575.111/24.582.259

USSR

MUKHAMADIYEV, B. T., KVITKO, K. V., and ZALENSKIY, O. V., Botanical Institute
Imeni V. I. Komarov, Academy of Sciences, USSR Leningrad; Institute of the
Physiology and Biophysics of Plants, Academy of Sciences Tadzhik SSR, Dushanbe;
and Chair of Genetics and Selection, Leningrad State University

"Chlorella Mutants Resistant to the Photophosphorylation Inhibitor 3(3,4)-
Dichlorophenyl-1,1-Dimethylurea (DCMU). II. Mutagenic Effects of DCMU on
Different Strains"

Moscow, Genetika, Vol 7, No 5, 1971, pp 36-41

Abstract: In concentrations of 10^{-3} to 5×10^{-3} M, DCMU has both lethal and
mutagenic effects on Chlorella strains of two different origins: Chlorella
vulgaris original strain B and its more resistant mutant B4; and Chlorella
pyrenoidosa original strain 82 and its more resistant mutant Z2. Equal
concentrations of DCMU inhibit the original strains to a much greater degree
than the mutants. After Chlorella cells adapt to DCMU, its lethal effect
becomes considerably smaller. Adaptation to DCMU does not eliminate its
mutagenic effect in the above-mentioned concentrations; as a result, the
resistant strains are more mutable. The mutations include: 1) mutants which
restore their pigment to initial color in the light but lose it again in
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USSR

MUKHAMADIYEV, B. T., et al., Genetika, Vol 7, No 5, 1971, pp 36-41
darkness; 2) mutants which die in the light; and 3) mutants which partly
preserve their pigment. The mutagenic effect of DCMU is considerably smaller
than that of N-nitroso methylurea, while its lethal effect is markedly
greater.

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USSR

UDC 517.917

MUKHAMADIYEV, E., Voronezh State University imeni Lenin Komsomol

"On the Invertibility of Differential Operators in a Space of Functions that are Continuous and Bounded on the Axis"

Moscow, Doklady Akademii Nauk SSSR, Vol 196, No 1, 1971, pp 47-49

Abstract: Given that C is a space of functions, continuous and bounded on $(-\infty, +\infty)$ with a value in the real Euclidean n -dimensional space R^n with norm

$$\|x(t)\|_C = \sup_t |x(t)|,$$

where $|x|$ is the Euclidean norm of the element $x \in R$ and C^1 denotes the space of functions $x(t) \in C$, for which the derivative $x'(t) \in C$ with norm $\|x(t)\|_{C^1} = \|x(t)\|_C + \|x'(t)\|_C$. The author considers the differential operator

$Lx(t) = x'(t) + A(t)x(t)$ in space C^1 , with a matrix function $A(t)$ continuous and bounded with respect to the norm $|A| = \max |ax|$ on the axis. Conditions are found under which the operator L has a continuous inverse or,

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USSR

MUKHAMADIYEV, E., Doklady Akademii Nauk SSSR, Vol 196, No 1, 1971, pp 47-49

what is the same thing, the differential equation

$$Lx(t) = f(t)$$

for each function $f(t) \in C$ has a unique solution $x^*(t) \in C^1$. The proof involves a periodic approximation on an interval with a length equal to double the period and a transition to integral equations.

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USSR

UDC 517.917

MUKHAMADIYEV, E., Voronezh State University imeni Lenin Komsomol

"On the Theory of Periodic Solutions of Systems of Ordinary Differential Equations"

Moscow, Doklady Akademii Nauk SSSR, Vol. 194, No. 3, 21 Sep 70, pp 510-513

Abstract: A system of ordinary differential equations

$$dx/dt = F(t, x) \quad (1)$$

is considered; where $x = \{x_1, \dots, x_n\}$ is a point of the n -dimensional space R^n ; the vector function $F(t, x)$ is defined and continuous over the variables t, x in the region $(-\infty < t < \infty, x \in R^n)$; and the vector function is also ω -periodic with respect to t . It is pointed out that the problem of the existence of ω -periodic solutions of the system (1) is equivalent to the problem of the existence of zeros of the fully continuous vector field

$$\Phi x(t) = x(t) - Ax(t). \quad (2)$$

USSR

MUKHAMADIYEV, E., Doklady Akademii nauk SSSR, Vol. 194, No. 3, 21 Sep 70, pp 510-513

This paper is concerned with calculating the rotation of a fully continuous vector field (2) for certain classes of systems of ordinary differential equations. A theorem is proved which makes it possible to reduce the calculation of the fully continuous vector field

$$\phi_1 x(t) = x(t) - x(\omega) - \int_0^t \{P[s, x(s)] + f[s, x(s)]\} ds$$

to a calculation of the rotation of the simpler vector field

$$\phi_0 x(t) = x(t) - x(\omega) - \int_0^t P[s, x(s)] ds.$$

This theorem can also be used in standard form to prove the existence of second periodic solutions for the system

$$dx/dt = P(t, x) + f(t, x),$$

where the vector function $P(t, x)$ is continuous over the variables t, x ; is ω -periodic with respect to t ; and is positive-homogeneous with respect to x of the order $m > 0$ ($P(t, \lambda x) = \lambda^m P(t, x)$ for $\lambda \geq 0$).

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USSR

UDC: 537.533

ARIFOV, U. A., MUKHAMADIYEV, E. S., PARILIS, E. S., and PASYUK, A. S.,
Joint Institute of Nuclear Research, Dubna

"Identification of Multicharge Ions from the Electron Emissions They Cause"

Leningrad, Zhurnal Tekhnicheskoy Fiziki, No 2, 1973, pp 375-379

Abstract: In the analysis of an ion beam with a mass analyzer. the ions are divided in accordance with their mass/charge ratios. In such a beam, however, there are ion pairs of the same or similar ratio, thus giving rise to the problem of quantitatively identifying the ions making up these pairs. In an earlier paper one of the authors named above (Parilis, E. S., Reprint of the OIYaI, R7-335, Dubna, 1967) proposed a method for identifying such multicharge ions from the potential electron emission from metals they produce. The function of the present article is to explain briefly the mechanism of the electron emission and the theory behind the identification method and to give the method and results of experimental research conducted by the LYaR OIYaI (Nuclear Reactions Laboratory of the Joint Institute of Nuclear Research) in Dubna.

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USSR

UDC: 537.533

ARIFOV, U. A., et al, Zhurnal Tekhnicheskoy Fiziki, No 2, 1973,
pp 375-379

A diagram of the experimental equipment and curves for its results are presented. The authors express their gratitude to Academician G. N. Flerov and Ye. D. Vorob'yev for their support and to Yu. P. Tret'yakov and R. I. Ivannikov for their assistance.

2/2

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USSR

MUKHAMBEETOV, D. D., Chair of Molecular Pharmacology and Radiobiology, Second Moscow Medical Institute imeni N. I. Pirogov

"The Immunodepressive Action of Poly-4-Vinylpyridine-Containing Alkylating Groups"

Alma-Ata, Zdravookhraneniye Kazakhstana, No 11, 1972, pp 39-40

Abstract: The immunodepressive effects of sarcolysin bound to poly-4-vinylpyridine by one alkylating group (K-19) and of the polymer without sarcolysin (K-23) were investigated on white mice immunized with a single intraperitoneal injection of sheep erythrocytes. Like sarcolysin, K-19 given in a dose of $1/4$ to $1/2$ LD₅₀ 1 day prior to immunization inhibits production of hemolysins and hemagglutinins and reduces the weight of the thymus and spleen. In a dose of $1/8$ LD₅₀, neither compound exerts any significant effects. However, the same doses of either agent given daily from the 1st day prior to the 4th day after immunization are strongly immunodepressive. When given on the 4th and 2d day prior to immunization, the depressive effect of K-19 by far exceeds that of sarcolysin. If the compounds are given on the day of and after immunization, they completely inhibit antibody production. If given in a dose $1/5$ LD₅₀ 2 days after immunization, K-19 exerts a greater effect.

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USSR

MUKHAMMETOV, D. D., Zdravookhraneniye Kazakhstana, No 11, 1972, pp 39-40

effect than sarcolysin. On the other hand, K-23 has no effect on either antibody formation of the thymus and spleen weight, even though it is toxic. When given according to a definite schedule, K-19 prolongs the survival of cutaneous allotransplants by several days more than sarcolysin. It is concluded that K-19 is a powerful immunodepressive agent.

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USSR

UDC 621.375.826.001

MUKHAMEDGALIYEVA, A. F., TATARENKOV, V. M., TITOV, A. N., USPENSKIY, A. V.

"Study of the Lamb Trough in the Determination of the Radiation Width of the Transition Line $3S_2-3P_4$ of the Ne^{20} Atom"

Tr. VNII fiz.-tekhn. i radiotekhn. izmereniy (Works of the All-Union Scientific Research Institute of Physicotechnical and Radio Engineering Measurements), 1970, No. 3(33), pp 281-290 (from Referativnyy Zhurnal, Metrologiya i izmeritel'naya tekhnika, No 11, Nov 71, Abstract No 11.32.62)

Translation: The width and relative size of the Lamb trough $\lambda = 3.39 \mu$ were studied as a function of the intensity of the saturating field on the gas pressure. It was shown that the relative size of the trough as a function of the field intensity has a maximum with a magnitude decreasing with an increase in the pressure. The radiation width of the $3S_2-3P_4$ transition of the Ne^{20} atom (24 ± 6 MHz) and the broadening of the homogeneous line by pressure (150 ± 40 MHz/mm Hg) were determined. The shift in the maximum of the output power of the generator with an increase in pressure in an amplifier tube was measured and was 16 ± 2 MHz/mm Hg for isotopically pure Ne^{20} and 33 ± 3 MHz/mm Hg for a natural mixture of the isotopes. 5 ill., 8 ref.
1/1

USSR

MUKHAMEDKHANOVA, R. I.

"Estimate of the Convergence Rate and Exponential Rule in Critical Branching Random Process with Continuous Time"

Sluchayn. Protsessy i Stat. Vyvody [Random Processes and Statistical Conclusions -- Collection of Works], Tashkent, Fan Press, 1971, pp 42-45
(Translated from Referativnyy Zhurnal, Kibernetika, No 1, 1975, Abstract No 1 V122 by B. Sevast'yanov).

Translation: It is proven that in a critical branching process with continuous time and finite third moment, the residual time in the limit theorem has order $O(\ln^2 t/t)$, where t is time. This result was earlier established by S. V. Nagayev and R. Mukhamedkhanova for critical processes with discrete time (see RZhMat, 1966, 12V46).

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USSR

UDC 669.018.2-151.8:620.172

MUKHAMEDOV, A. A., and MAKSUDOV, SH. SH., Tashkent Polytechnic Institute

"Investigation of the Post-Recrystallization Strength of a Previously Superheated Steel"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy--Chernaya Metallurgiya, No 6, Jun 73, pp 97-100

Abstract: The inheritance of the structural characteristics of previously superheated St. 3 and 45 steels was investigated. Superheating temperatures were 850, 930, 1000, 1100, 1200, and 1260°C. Repeated accelerated heating of samples 5 mm in diameter in a lead bath with subsequent quenching leads to a change in tensile strength. Strength and physical width of x-ray diffraction lines change with the change of superheating temperature and, although the structure can be refined by tempering, the steels still inherit the structure caused by superheating. 3 figures, 1 table, 9 bibliographic references.

1/1

Miscellaneous

USSR

UDC 620.186.5

MUKHAMEDOV, A. A., and MAKSUDOV, SH. SH., Tashkent Polytechnical Institute and Tashsel'mash

"X-Ray Study of Inheritance of Fine Structure of Preliminarily Superheated Steel After Recrystallization"

Tashkent, Izvestiya Akademii Nauk Uzbekskoy SSR, No 5, 1970, pp 53-55

Abstract: This work presents a study of the change in fine structure during recrystallization of types 45, 40Kh, and 30KhGT steels. The specimens were preliminarily heated to 850-1260°C for 20-25 min, then cooled in air (normalized). The normalized specimens were reheated at various rates and holding times (in a lead bath, holding time 5 min, in furnace atmosphere -- 20 min and 2 hr) with subsequent quenching in oil or water, heated to 30-50°C. The hardened specimens were tempered at 200, 350, 450, 570, and 600°C. After heat treatment, sections were prepared and etched to remove work-hardened layers, and x-ray diagrams were made using Fe, K α -radiation. It was established that the process

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USSR

MUKHAMEDOV, A. A., and MAKSUDOV, SH. SH., *Izvestiya Akademii Nauk Uzbekskoy, SSR*, No 5, 1970, pp 53-55

of recrystallization is accompanied by inheritance of the fine structure due to the thermal stability of dislocation structures, which change significantly during tempering. This can lead to variations in mechanical properties.

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Miscellaneous

USSR

UDC 620.186.5

MUKHAMEDOV, A. A., and MAKUDOV, SH. SH., Tashkent Polytechnical
Institute and Tashsel'mash

"X-Ray Study of Inheritance of Fine Structure of Preliminarily
Superheated Steel After Recrystallization"

Tashkent, Izvestiya Akademii Nauk Uzbekskoy SSR, No 5, 1970,
pp 53-55

Abstract: This work presents a study of the change in fine structure during recrystallization of types 45, 40Kh, and 30KhGT steels. The specimens were preliminarily heated to 850-1260°C for 20-25 min, then cooled in air (normalized). The normalized specimens were reheated at various rates and holding times (in a lead bath, holding time 5 min, in furnace atmosphere -- 20 min and 2 hr) with subsequent quenching in oil or water, heated to 30-50°. The hardened specimens were tempered at 200, 350, 450, 570, and 600°C. After heat treatment, sections were prepared and etched to remove work-hardened layers, and x-ray diagrams were made using Fe, K α -radiation. It was established that the process

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USSR

MUKHAMEDOV, A. A., and MAKSUDOV, SH. SH., *Izvestiya Akademii Nauk Uzbekskoy, SSR*, No 5, 1970, pp 53-55

of recrystallization is accompanied by inheritance of the fine structure due to the thermal stability of dislocation structures, which change significantly during tempering. This can lead to variations in mechanical properties.

USSR

UDC: 620.186.5

M
MUKHAMEDOV, A. A. and MAKSUDOV, Sh. Sh.

"Inheritance of Fine Structures in Recrystallization and its Effect on the Durability of Steel"

Tashkent, Izvestiya akademii nauk Uzbekskoy SSR -- Seriya tekhnicheskikh nauk, No. 4, 1970, pp 47-48

Abstract: The inheritance of a fine structure in the recrystallization of steel changes the durability of the steel. This article investigates the change in steels of the 40Kh and 30KhGT types, specimens of which were normalized at temperatures of 870-1200°. After cooling, the 40Kh and 30KhGT specimens were heated repeatedly up to 870° and 880° respectively for 20 minutes and then tempered in oil at 200° C for one hour. X-ray pictures were taken with a KROS-1 camera. Specimens examined for friction effects were tested on an MI-1 machine for rolling friction with slippage. The results establish the linearity of the steel durability with tempering as a function of the width of the X-ray line, i.e., of the dislocation density in the crystal lattice of the steel.

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Microbiology

USSR

SEREDIN, V. G., INZHEVATOVA, M. V., ~~MIKHAMEDOV, S. M.~~, RIVKUS, Yu. Z., and
BYSTRYY, N. F., Uzbek Anti plague Station

"Testing Cholera Phage With a 'Stamp'"

Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 11, 1971, pp 75-77

Abstract: The "stamp" is a device to study a number of cholera vibrio strains at the same time. It consists of five aluminum plates connected by cross-pieces. Each plate has five short pins whose distal ends are working surfaces to which phages are applied. The phages to be tested are diluted in test tubes to 10^{-4} and poured into special plates (0.5 to 0.5 ml of each dilution) containing wells arranged in 5 rows of 5 wells each corresponding to the number of pins on the "stamp." The "stamp" is immersed with the pins in alcohol in a Petri dish and heated over an alcohol lamp. It is then dipped into the wells with phage and an impression made on the surface of 0.7% soft agar with the culture under study. After the drops of phage dry, the dishes are incubated for 18 hours. A laboratory technician should be able to apply phage to 300 to 400 dishes in 3 hours.

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USSR

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ZAIROV, K. S., SEMIOTROCHEV, V. L., CHICHENIN, P. I., ~~MUKHAMEDOV, S. M.~~
PULATOV, Ya. G., and LI GVAN KHVA, V. T., Central Asian Scientific Research
Antiplague Institute Ministry of Health Uzbek SSR and Uzbek Antiplague
Station

"Some Problems of the Spread of El Tor Cholera and Its Prophylactic Measures"

Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 2, 1972, pp 10-14

Abstract: Mild cholera cases and, especially, cholera carriers are not always detected or reported. This is especially true for El Tor cholera, which breaks out in alternating waves, first epidemic, then sporadic. It takes a relatively milder course and is less lethal than ordinary cholera, sometimes resembling a gastrointestinal upset. El Tor vibrios found in water sources in certain areas are lysogenic, in others not. Members of the family and neighborhood of those suffering the disease, particularly preschool children, are often carriers, for a period of about four days after contact. Certain important measures dealing with the sources of infection are suggested: 1) compulsory bacteriological examination of persons arriving from Asian countries 2) Epidemiological examination for cholera for all those suffering gastro-intestinal disturbances 3) development and application of effective methods

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USSR

ZAIROV, K. S., et al., Meditsinskiy Zhurnal Uzbekistana, No 2, 1972, pp 10-14

for curing all forms of cholera 4) setting up various types of installations, ensuring strict sanitary inspection, especially in areas of mass passenger travel.

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Epidemiology

USSR

ZAIROV, K. S., CHICHENIN, P. I., MUKHAMEDOV, S. M., PULATOV, YA. G., LI-GVAN-KHVA, INZHEVATOVA, M. V., ARTYKOV, K. A., and SEREDIN, V. G.

"Methods and Tactics to be Applied in Detecting Local Foci of Cholera"

Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 12, Dec 71, pp 3-7

Abstract: With the appearance of the El Tor variety of cholera, endemic foci of this disease developed in a number of countries in which classical cholera could not take root. The reason for this is the capacity of El Tor vibrios to survive for prolonged periods of time in the human organism and the environment. Local cholera foci came developed in which the circulation of the agent is sustained by a chain of atypical diseases, prolonged carrier state of the vibrios in humans, and possibly transmission of the infection by aquatic organisms. Discovery of the carrier state among persons with diseases of the bile secretion system led A. G. Nikonov (1960) to the conclusion that cholera vibrios may be retained for a long time in the gall bladder. He proved the correctness of this conclusion experimentally. During the recent cholera pandemic, vibrios were detected more frequently in the gall bladder. In cases of El Tor cholera, which is caused by hemolytic varieties of the microorganism, it is advisable to determine the titer of antibodies with reference to the hemolytic enzyme found in the supernatant liquid of

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USSR

ZAIROV, K. S., et al., Meditsinskiy Zhurnal Uzbekistana, No 12, Dec 71, pp 3-7

of meat broth cultures. The complement fixation reaction, which has been used as an immunological test for cholera in Russia since 1909, has been forgotten for inadequate reasons. The very small amount of cholera vibrios present in the stool of cholera patients and vibrio carriers can be detected by means of suspended antibodies, among which alizarin, indianthron, and anthragallo antibodies are used most frequently. Concentration of cholera vibrios on membrane filters follows by supplementary cultivation (Ye. V. Chibrikova, 1960, 1962) made it possible to increase greatly the sensitivity of the immunofluorescence method of detection. A. K. Adamov et al (1969) isolated El Tro vibrios from fish caught in rivers of Turkmenia. According to results obtained by the authors of this article, cholera vibrios may be detected in the intestine of fish even when tests on the water in which the fish have been caught are negative. Testing of fish is therefore recommended as a method for the detection of latent foci of cholera in bodies of water.

2/2

USSR

DYATLOV, A. I., MUKHAMEDOV, S. M., RIVKUS, Yu. Z., Uzbek Anti plague Station

"Natural Foci of Plague in Uzbekistan"

Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 4, 1971, pp 31-33

Abstract: Plague epizootics have regularly been observed in the northern and northwestern parts of the Kyzyl Kum desert in the Uzbek SSR. This region should be regarded as enzootic for plague bacteria, which are continuously being passed from one rodent to another by fleas. In other territories of the republic to the south, plague epizootics were always observed following development in principal foci, and were due to transfer of microbes in jumps over considerable distances, at times by infected wild animals. The occurrence of a focus is affected to a great extent by the number of carriers, their annual and seasonal dynamics, by climate and topography, as well as by conditions of different years. An intense epizootic flared up in Kyzyl Kum in 1969 after a four-year interval, an independent local epizootic focus occurred in 1964 in the Amu-Dar'ya delta (north Kyzyl Kum) after a 9-year interval, and a year later, after a similar interval, in a neighboring sector. Such sudden reactivations of plague foci are related to natural factors, revealing a certain independence of epizootic development. The results of the investigation demonstrate that the plague epizootic process in Kyzyl Kum is very active, necessitating systematic observation and study of particularly dangerous areas.

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Epidemiology

USSR

CHICHENIN, P. I., MUKHAMEDOV, S. M., SEREDIN, V. G., INZHEVATOVA, M. V., and
LI GVAN KHVA, V. T.

"Contribution to the Taxonomy of El Tor Vibrios"

Tashkent, Meditsinskiy Zhurnal Uzbekistana, no 9, Sep 70, pp 42-46

Abstract: During the last 50 years, no agreement has been reached on the true cholera vibrio. Feeley, who studied 220 strains, divided them into five biotypes. However, since all were true cholera vibrios, he regarded the division into the classic cholera vibrios and the El Tor vibrios as invalid. The classification into lysogenic and nonlysogenic strains does not correspond to their virulence. The varying susceptibility of the vibrios to bacteriophages facilitated determination of the geographic distribution of lysogenic El Tor vibrios. Since no classification has been officially approved, it is apparent that there is only one cholera pathogen: *Vibrio cholerae*. The dissimilarities among its variants lie within the limits of genus variability. They all have one common property: they cause cholera in man. Vaccines made with the classic cholera vibrios are effective against El Tor vibrios. In addition to the dissimilarities, there are some biological dissimilarities between classical and El Tor vibrios. The El Tor vibrios survive longer in the external environment, especially in

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USSR

CHICHENIN, P. I., et al, Meditsinskiy Zhurnal Uzbekistana, No 9, Sep 70, pp 42-46

water, and are more resistant to antibiotics. Contrary to the classic type, they are all prototrophic. The great vitality of the El Tor vibrios is manifested by their interaction with the classic type in vitro and in vivo. However, no explanation has yet been found for the fact that the El Tor cholera which developed in India in March-April 1964 almost completely displaced the classic cholera. People can carry El Tor vibrios for many years. The ability to produce endemic foci is greater for the El Tor than for classic vibrios. Staple endemic situations induced by El Tor vibrios have recently been observed in the Philippines, Vietnam, Thailand, and Indonesia.

USSR

M
SEREDIN, V. G., CHICHENIN, P. I., MUKHAMEDOV, S. M., and INSREYATOVA,
M. V.

"The Problem of the El Tor Vibrios"

Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 1, 1970, pp 3-7

Abstract: In recent years, cholera has been caused mainly by the El Tor vibrio. It was first discovered in pilgrims toward the end of the 19th Century in the El Tor Quarantine Station on the Sinai Peninsula. In 1905, when mortality from dysentery increased among pilgrims quarantined at the El Tor Station, Gotschild was sent there to investigate the possible presence of cholera vibrios among the pilgrims. From 107 cadavers, he isolated 33 vibrio strains, identifying six as cholera vibrios, since they were identical with cholera vibrios in all aspects and were agglutinated by anticholera serum. However, both groups were able to produce true hemolysis in goat and sheep erythrocytes. They contained a hemotoxin and exotoxin which are characteristic of the non-cholera Nasik vibrios. Furthermore, their antitoxic sera caused cross neutralization but no cross agglutination. For these reasons, the El Tor vibrios were not regarded
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USSR

SEREDIN, V. G., et al., Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 1, 1970, pp 3-7

as cholera-producing. However, most Russian scientists, especially those who worked during the 1908-1909 cholera epidemic in Petersburg, were of a different opinion. They found that with diminishing enzymatic activity, the strains would lose their hemolytic ability. By 1938, the number of identified strains of El Tor vibrios increased to 50. Doorenbos considered them to be cholera-producing vibrios affected by phages. The first cholera outbreak caused by EL Tor vibrios was recorded in 1937 on Sulawesi Island, and the second outbreak, caused by hemolytic vibrios, was recorded in 1943 in India. This gave rise to a polemic about the exact definition of true cholera vibrios, and was followed by extensive investigations of various strains with regard to their morphological, biological, biochemical, serological, and cultural properties. Numerous tests were developed which revealed, among other things, that the hemolytic ability of the vibrios was variable and perishable. As a result, the El Tor vibrios were divided into three groups: constantly hemolytic, constantly nonhemolytic, and weakly hemolytic, even though hemolysin is not essential in the pathogenesis of cholera. In 1964, 2/3

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USSR

SEREDIN, V. G., et al., Tashkent, Meditsinskiy Zhurnal Uzbekistana, no 1, 1970, pp 3-7

Nobechi isolated strains of the classic cholera vibrios, which were resistant to Muckerjee phage IV. These strains were called intermediate. It was concluded that El Tor vibrios, both pathogenic and non-pathogenic, also occupy an intermediate phylogenetic position and are the predecessors of classical cholera strains.

3/3

1/2 009 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--PHOTOELECTROCOLORIMETRIC DETERMINATION OF ACETYLCHOLINE IN BLOOD
-U-
AUTHOR--MUKHAMEDSHIN, R.I. *M*
COUNTRY OF INFO--USSR
SOURCE--LAB. DELO 1970, (3), 183-4
DATE PUBLISHED--70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--ACETYLCHOLINE, SPECTROPHOTOMETRIC ANALYSIS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--2000/0182 STEP NO--UR/9099/70/000/003/0183/0184
CIRC ACCESSION NO--AP0123953
UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0123953

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A NEW MODIFICATION OF THE
SPECTROPHOTOMETRIC METHOD FOR THE DETN. OF ACETYLCHOLINE (CF. O. V.
PETROVA (1964), I. V. SHUTSKII (1967)) IN 1 ML OF BLOOD WAS DESCRIBED.
FACILITY: ANDIZHAN. MED. INST., ANDIZHAN, USSR.

UNCLASSIFIED

1/2 039 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--INTERFERENCE KILLING FEATURE OF AN AUTOCORRELATION RECEIVER IN
CORRELATED AND UNCORRELATED INTERFERENCE -U-
AUTHOR--(03)-VOKONIN, V.I., DUNAYEV, A.S., MUKHAMEDYAROV, R.D.
COUNTRY OF INFO--USSR
SOURCE--LNINGRAD, OPTIKO MEKHANICHESKAYA PROMYSHLENNOST', NO 1, 1970, PP
20-24
DATE PUBLISHED-----70
SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR., NAVIGATION
TOPIC TAGS--INTERFERENCE REDUCTION, AUTOCORRELATION FUNCTION, SIGNAL
PROCESSING, DATA TRANSMISSION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1999/1346 STEP NO--UR/0237/70/000/001/0020/0024
CIRC ACCESSION NO--AP0123304
UNCLASSIFIED

2/2 039

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0123304

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A COMPARATIVE EVALUATION WAS MADE OF THE INTERFERENCE KILLING FEATURE OF TWO METHODS FOR PROCESSING ELECTRONIC SIGNAL COMING FROM A PHOTO DATA UNIT IN AN ADDITIVE MIXTURE OF CORRELATED AND UNCORRELATED INTERFERENCE.

UNCLASSIFIED

USSR

UIC 621.762.002.5(088.8)

MEL'NIKOV, V. N., TRET'YAKOV, V. I., YEMEL'YANOVA, M. D., MUKHAMEDZHANOV, A. K., KAMENSKAYA, D. S., MORGUN, G. N., CHAVRIKOV, M. G., and GRACHEV, Yu. S.

"Rotating Electrical Furnace for Production of Metallic Powders"

USSR Author's Certificate No 267823, Filed 23/06/66, Published 23/07/70
(Translated from Referativnyy Zhurnal-Metallurgiya, No 2, 1971, Abstract No 2 G477 P)

Translation: The furnace includes a hopper, loading and unloading chambers with worms, a body, rotating tube, and a device for removal of the layer of powder accumulating on the surface of the tube. In order to increase productivity of the process and improve working conditions, the device for removal of the powder layer from the surface of the tube is firmly fastened in the working space of the tube so that its leading edge is located parallel to its axis and its working face is at an angle to the radius. The device is attached to parts of the loading and unloading chambers.

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1/2 037 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--NATURE OF SEISMIC ECHO ON THE MOON -U-
AUTHOR--MUKHAMEDZHANOV, A.K. *M*
COUNTRY OF INFO--USSR
SOURCE--PRIODGA, NO. 3, 1970, P. 74-75
DATE PUBLISHED-----70

SUBJECT AREAS--ASTRONOMY, ASTROPHYSICS, EARTH SCIENCES AND OCEANOGRAPHY
TOPIC TAGS--LUNAR SURFACE, HYPERVELOCITY IMPACT, METEORITE, SEISMIC
REFLECTION, HARD LANDING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1991/0873

STEP NO--UR/0026/70/000/003/0074/0075

CIRC ACCESSION NO--AP0110594

UNCLASSIFIED

2/2 037

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0110594

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DISCUSSION OF POSSIBLE CAUSES OF THE EXCESSIVELY LONG SEISMIC ECHO PRODUCED BY THE IMPACT OF THE JETTISONED APOLLO 12 S-IVB STAGE AT THE LUNAR SURFACE. A THEORY OF MULTICASCADE SCATTERING OF LUNAR MATTER ON A METEORITE IMPACT AS PROPOSED IN 1965 IS APPLIED TO AN ANALYSIS OF THE NATURE OF THIS ECHO. IT IS MAINTAINED THAT THIS THEORY EXPLAINS WELL, BOTH QUALITATIVELY AND QUANTITATIVELY, THE BEHAVIOR OF SEISMIC ECHO ON THE MOON.

UNCLASSIFIED

Nuclear Science and Technology

USSR

UDC 666.764.4:543.53

MUKHAMEDSHINA, N. M., and YANKOVSKIY, A. V., Institute of Nuclear Physics of the Academy of Sciences UzbekSSR

"Determination of Admixtures in Graphite by the Neutron-Activation Method"

Moscow, Zavodskaya Laboratoriya, Vol 38, No 9, 1972, pp 1099-1101

Abstract: The experimental method of neutron-activation analysis was applied for the determination of Al, Si, Na, Mg, Mn, Cu, Fe, Cr, Sc, and Sb admixtures in natural graphite. Depending on the nuclear-physical properties of the admixtures, neutrons of a water-moderated water-cooled reactor (VVR-S) and high-speed neutrons of 14 Mev energy of the HG-200 generator were used for their determination. Gamma spectra of graphite were taken with single-channel and multi-channel scintillation gamma-spectrometers after 4 and 20 min, 3 and 21 hrs, and 30 days of irradiation. Tabulated results show percentages of the admixtures, their sensitivity, and their relative mean square error, calculated from results of five parallel determinations. The latter did not exceed 12%. Three figures, one table, six bibliographic references. 1/1

USSR

UDC 631.859.13.546.47

MUKHAMEDZHANOV, M., KHAKIMOVA, V. K., and VISHNYAKOVA, A. A., Institute of Chemistry, Academy of Sciences Uz. SSR

"Behavior of the Trace Element Zinc During the Production of Ammophos"

Tashkent, Uzbekskiy Khimicheskiy Zhurnal, No 2, 1971, pp 15-16

Abstract: The composition of zinc salts in ammophos bulk was studied by mixing phosphoric acid with zinc sulfate followed by addition of ammonia. It was found that prior to addition of ammonia no reaction took place in the mixture. When ammonia was bubbled in, again no reaction was observed up to pH 2.4. In the range 2.4-3.5 some reaction occurred producing small amounts of $Zn(H_2PO_4)_2$. Only when the pH was increased to above 3.5, solid phase began to appear in the mixture. A product with the formula $ZnNH_4PO_4$ was isolated. Presumably this material was formed in the ammophos due to the microadmixture of zinc.

1/1

- 38 -

Acc. Nr:

AP0049807

Abstracting Service:

CHEMICAL ABST. 5/70

Ref. Code:

U R 0170

104711k Experimental study of the thermal conductivity of organic liquids at low temperatures. Brykov, V. P.; Mukhammedzhanov, G. Kh.; Usmanov, A. G. (Khim.-Tekhnol. Prikl. Khim. Kazan, USSR). *Inzh.-Fiz. Zh.* 1970, 18(1), 82-8 (Russ)

A device is constructed for the detn. of the thermal cond., λ , of liqs. The thermal cond. of C_4H_{10} , *n*-butane, *n*-pentane, *n*-hexane, *n*-heptane, *n*-octane, *n*-nonane, *n*-decane, 1-hexene, 1-heptene, MePh, and isoprene are given from their m.p. to 100° above the m.p. The thermal cond. of these liqs. is described by the equations $q/q_{\Delta S} = 2.03 (S_i - S/R)$ or $\lambda/\lambda_{S_i} = \psi(S/S_i)$, where $q/q_{\Delta S}$ = relative heat flux; $q_{\Delta S}$ = scale heat flux, S and S_i are current and initial value of entropy and R is the universal gas const.

HMJR

REEL/FRAME

19801729

USSR

UDC 621.375.421

MUKHAMEDZYANOV, M. S.

M

"Problem of Comparing the Amplifying Characteristics of One-Loop and Two-Loop Cascades of Wideband Transistor Amplifiers"

Sb. nauch. tr. Uralskiy elektromekhan. in-t inzh. zh.-d. transp. (Collection of Scientific Works of the Ural Electromechanical Institute of Railroad transportation Engineers), 1970, vyp. 27, pp 77-82 (from RZh-Radiotekhnika, No 9, Sep 70, Abstract No 9D127)

Translation: A comparison is made for the given invariant pass band. A resonance circuit with a series loop in the secondary circuit is selected as the two-loop cascade. The bibliography has one entry.

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USSR

UDC 542.91:547.1'118

RIZPOLOZHENSKIY, N. I., and ~~NUKHAMETOV, F. S.~~, Institute of Organic and Physical Chemistry imeni A. YE. Arbuzov, USSR Academy of Sciences

"First Stage of the Formation of Oxaphospholanolols"

Moscow, Izvestiya Akad. Nauk SSSR, Seriya Khimicheskaya, No 1, Jan 72, pp 175-176

Abstract: As a confirmation (of the first stage) of their earlier proposed scheme representing the reaction between diacetone alcohol with the phosphoryl dichlorides (trivalent phosphorus), the authors used the infrared method to study the interaction of β -acetylethyl alcohol with alkyl-dichlorophosphates in the presence of triethylamine, which produced alkyl-di-(γ -keto-butyl) phosphites. Analytical data and infrared chart accompany the paper.

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USSR

UDC 542.91:547.1'118

MUCHAMETOV, F. S., RIZPOLOZHENSKIY, and SAMITOV, YU. YU., Institute of Organic and Physical Chemistry imeni A. YE. Arbuzov, USSR Academy of Sciences

"Reactions of Keto-Alcohols with Organophosphorus Compounds. 6. Reaction Between β -Keto-alcohols and Phosphorodichlorides"

Moscow, Izvestiya Akad. Nauk SSSR, Seriya Khimicheskaya, No 1, Jan 72, pp 72-78

Abstract: Reactions between the keto-alcohols and the phosphorodichlorides have occupied several study groups in the past three years; however, the control of the phosphorus component during the reaction with the use of infrared microscopy has proved difficult.

The authors undertook control using the nuclear-magnetic-resonance P^{31} method, in the reaction between diacetone and β -acetoethyl alcohols with phenyldichlorophosphine.

The five-stage character of the reaction was clearly confirmed (reported earlier by B. A. ARBUZOV et al),

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USSR

UDC 542.91:661.718.1

MUKHAMETOV, F. S., RIZPOLOZHENSKIY, N. I., and GOL'DFARB, E. I., Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Academy of Sciences USSR

"Reactions of Ketoalcohols with Organophosphorus Compounds. 5 Communication. Reaction of β -Ketoalcohols with Chlorophosphines"

Moscow, Izvestiya Akademii Nauk SSSRm Seriya Khimicheskaya, No 10, Oct 71, pp 2221-2225

Abstract: Reaction of β -ketoalcohols (I) with chlorophosphines (II) in the absence of organic bases yields tertiary phosphine oxides: ethylphenylphosphine chloride and β -acetoethyl alcohol give 3-ketobutylethylphenylphosphine oxide, b.p. 135-137°/0.015 mm, n_D^{20} 1.5395, d_4^{20} 1.1107. The

reaction was monitored by means of IR spectroscopy. On the basis of spectral analysis it was proposed that the first step in the reaction of β -ketoalcohols with chlorophosphines is the formation of an acid $R'R''P(=O)H$ and an unsaturated ketone $R'R''C:CHC(=O)CH_3$ which then combine to yield the final product.

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- 60 -

USSR

UDC 542.91 + 661.718.1

ARBUZOV, B. A., RIZPOLCZHENSKIY, N. I., VIZEL', A. O., IVANOVSKAYA, K. M., MUKHAMETOV, F. S., and GOL'DFARB, E. I., Institute of Organic and Physical Chemistry imeni A. Ye., Arbuzov, Acad. Sc. USSR

"Synthetic Routes of 1,2-Oxaphospholene Derivatives in the Reaction of β -Ketoalcohols With Acid Chlorides of Trivalent Phosphorus Acids"

Moscow, Izvestiya Akademii Nauk, SSSR, Seriya Khimicheskaya, No 1, Jan 71, pp 117-125

Abstract: In studying the reaction of β -ketoalcohols with acid chlorides of trivalent phosphorus acid, a series of 1,2-oxaphospholene derivatives was obtained. The reaction took place in several definitely marked stages. For example, dropwise addition of phenyldichlorophosphine to cooled diacetone alcohol resulted in an initial exothermic reaction producing a precipitate; the liquid portion becoming yellow, and an odor of mesitylene oxide becoming noticeable. The second half of the process occurred slowly, the precipitate disappeared, the reaction mixture becoming again almost colorless. When the volatile pro-

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USSR

• ARBUZOV, B. A., et al., Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 1, Jan 71, pp 117-125

ducts were removed, the reaction mixture crystallized, and finally liquefied again on distillation. A five stage mechanism has been proposed for this reaction: the first stage consisting of an alcoholysis of acyl chloride leading to the formation of an acid which then reacts with more starting material to produce a new acyl chloride, a very reactive compound which adds rapidly to the unsaturated ketone formed in the first stage to yield a ketochloride $RP(=O)Cl-CR_2CH_2COCH_3$ which isomerizes to 1,2-oxaphospholane. In the final step a molecule of HCL are not conjugated yielding 1,2-oxaphospholene.

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USSR

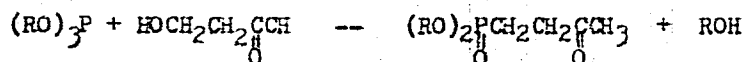
UDC: 542.91+661.713.1

RIZPOLOZHENSKIY, N. I., MUKHAMETOV, F. S., Institute of Organic and Physical Chemistry im A. Ya. Arbuzov, Academy of Sciences USSR

"Reactions of Ketoalcohols with Organophosphorus Compounds. Communication 4. Synthesis of gamma-Ketophosphonate Esters"

Moscow, Izvestiya Akademiyi Nauk SSSR, Seriya Khimicheskaya, No 5, May 70, pp 1087-1092

Abstract: It was found that on heating trialkyl phosphites with 3-ketobutanol to 140-160° in presence of metallic sodium, a good yield of the esters of gamma-ketophosphonic acids is obtained



The above reaction takes place also without catalyst when the temperature is raised and the time prolonged. The authors studied the reaction of 3-ketobutanol with trialkyl phosphites; the reaction of 3-ketobutanol with phosphonates and phosphinites; and the hydrolysis of diethyl gamma-ketobutyolphosphonate. It was found that trialkyl(aryl) phosphites and phosphonates react with 1/2

USSR

RIZPOLOZHENSKIY, N. I., et al, Izvestiya Akademiyi Nauk SSSR, Seriya Khimicheskaya, No 5, May 70, pp 1037-1092

3-ketobutanol with formation of the esters of gamma-ketobutyl-phosphonic and phosphinic acids, and the phosphinites -- with formation of tertiary phosphine oxides.

2/2

- 40 -

1/2 026 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--REACTION OF BETA ACETOISOPROPYL ALCOHOL WITH
ETHYLPHENYLCHLOROPHOSPHINE -U-
AUTHOR-(02)-MUKHAMETOV, F.S., RIZPOLOZHENSKIY, N.I.
COUNTRY OF INFO--USSR
SOURCE--AKAD. NAUK SSSR, SER. KHIM. 1970, (2), 499
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--PROPANOL, CHLORINATED ORGANIC COMPOUND, ORGANIC PHOSPHORUS
COMPOUND, IR SPECTRUM, NMR SPECTRUM

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/0835 STEP NO--UR/0062/70/000/002/0499/0499
CIRC ACCESSION NO--AP0119739
UNCLASSIFIED

2/2 026 UNCLASSIFIED PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AP0119739
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ADDING 21.6 G ETPHPCL AT
MINUS15DEGREES UNDER CO SUB2 TO 12.8 G ACCH SUB2 CHMEOH (HCL EVOLUTION)
GAVE ON THE FOLLOWING DAY 45PERCENT ETPHP(O) CHMECH SUB2 AC, 8 SUBO
TIMES 01 142-50DEGREES, N PRIME20 SUBD 1.5370, D PRIME20 1.0895. IR AND
NMR SPECTRAL DATA ARE GIVEN. FACILITY: INST. ORG. FIZ. KHIM.
IM. ARBUZOVA, KAZAN, USSR.

UNCLASSIFIED

1/2 013 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--REACTIONS OF OXAPHOSPHOLANOLS WITH PHOSPHORUS ACID MONOCHLORIDES
-U-
AUTHOR--(03)--RIZPOLOZHENSKIY, N.I., ~~MUKHAMETOV, F.S.~~, GOLDFARB, E.I.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (3), 683-5
DATE PUBLISHED--70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--HETEROCYCLIC BASE COMPOUND, ORGANIC PHOSPHORUS COMPOUND,
ORGANIC OXIDE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FAME--1999/1760 STEP NO--UR/0062/70/000/003/0683/0685
CIRC ACCESSION NO--AP0123561

UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0123561

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. REACTION OF I WITH R PRIME1 R
PRIME2 PCL IN THE PRESENCE OF ET SUB3 N IN C SUB6 H SUB6 5 HR AT REFLUX
GAVE 42-73PERCENT II (R, R PRIME1, AND R PRIME2 SHOWN): SHOWN ON
MICROFICHE. FACILITY: INST. ORG. FIZ. KHM., KAZAN, USSR.

UNCLASSIFIED

1/2 013 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--REACTIONS OF OXAPHOSPHOLANOLS WITH DIALKYL CHLOROPHOSPHITES -U-
AUTHOR--(03)-RIZPOLOZHENSKIY, N.I., MUKHAMEDOV, F.S., GOLDFARB, E.I.
COUNTRY OF INFO--USSR
SOURCE--IZVESTIYA AKADEMII NAUK SSSR, SERIYA KHIMICHESKAYA, 1970, NR 3, PP
683-685
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--HETEROCYCLIC BASE COMPOUND, ORGANIC PHOSPHORUS COMPOUND, ALKYL
PHOSPHITE, HETEROCYCLIC OXYGEN COMPOUND
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3007/1301 STEP NO--UR/0062/70/000/003/0683/0685
CIRC ACCESSION NO--AP0136702
UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0136702

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MICROFICHE OF ABSTRACT CONTAINS GRAPHIC INFORMATION. ALKYL DICHLOROPHOSPHITES REACT WITH TWO MOLES OF DIACETONE ALCOHOL IN THE PRESENCE OF ORGANIC BASES TO FORM 2-ALKOXY-2-KETO-3,3,5-TRIMETHYL-1, 2-OXA-3-PHOSPHALANOLS (I). THE HYDROXYL IN I REACTS WITH DIALKYL CHLOROPHOSPHITES: (FORMULA SHOWN ON MICROFICHE). AT ROOM TEMPERATURE THE REACTION IS SLUGGISH DUE TO INTER AND INTRAMOLECULAR HYDROGEN BONDING, EVEN AT LOW REAGENT CONCENTRATIONS; STERIC HINDRANCE OF THE TERTIARY HYDROXYL IS PROBABLY ALSO IMPORTANT. THE REACTION REQUIRES FOUR TO FIVE HOURS IN BOILING BENZENE, IN THE PRESENCE OF TRIETHYLAMINE. (SHOWN ON MICROFICHE). FACILITY: INSTITUT ORGANICHESKOY I FIZICHESKOY KHIMII IMENI A. YE. ARBUZOVA, AN SSSR.

UNCLASSIFIED

USSR

UDC 542.91 + 661.718.1

MUKHAMETOV, F. S., and RIZPOLOZHENSKIY, N. I., Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Academy of Sciences USSR

"Interaction of β -Acetoisopropyl Alcohol With Ethylphenylchlorophosphine"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 2, Feb 70, p 499

Abstract: In studying the reaction of ketols with different organophosphorus compounds, the authors found that the interaction of ethylphenylchlorophosphine with β -acetoisopropyl alcohol gives ethylphenyl-(1-methyl-3-ketobutyl)phosphine oxide.

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USSR

M

UDC 542.938 + 661.718.1

RIZPOLOZHENSKIY, N. I., MUKHAMETOV, F. S., and SAMITOV, YU. YU.,
Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov,
Kazan, Academy of Sciences USSR

"Hydrolysis of Oxaphospholanol-3"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, Vol 4,
Apr 70, pp 910-912

Abstract: On the basis of proton magnetic resonance spectral analysis, the authors claim that acid hydrolysis of 2-alkoxy-2-keto-3,5,5-trimethyl-1,2-oxaphospholanol-3 occurs with preservation of cyclic structure, yielding 2-hydroxy-2-keto-3,5,5-trimethyl-1,2-oxaphospholene-3. When the reaction is carried out in basic medium, 2-ethyl-2-keto-3,5,5-trimethyl-1,2-oxaphospholanol-3 yields ethyl-(1,3-dihydroxy-1,3-dimethylbutyl)-phosphinic acid.

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USSR

UDC 539.124.547.1'118.541.57:546.11

SHAGIDULLIN, R. R., CHERNOVA, A. V., MUKHAMETOV, F. S., RIZPOLOZHENSKIY, N. I., Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov of the USSR Academy of Sciences

"Study of Electron Effects in a Series of 2-substituted oxaphospholanoles-3 by the H-Bond Method"

Moscow, Izvestiya Akademii Nauk SSSR- Seriya Khimicheskaya, No 11, 1972, pp 2585-2587

Abstract: The studies of the electron structure of phosphorus-containing compounds (R. R. Shagidullin, et al., Izv. AN SSSR. Ser. khim. 1123, 1966; Dokl. AN SSSR. No 173, 135, 1967; R. R. Shagidullin, et al., Izv. AN SSSR. Ser. khim. 183, 1971; R. R. Shagidullin, et al., Izv. AN SSSR. Ser. khim., 1168, 1971) are continued by applying the method introduced there to 2-substituted oxyphospholanoles-3. The proximity of the P atom causes a change in the acceptor capacity of the diethylamino group with respect to the proton. The variation in the acceptor capacity is connected with delocalization of the electron cloud of the substitution on the P atom. This phenomenon is explained by partial shifting of the unshared pair of electrons of the nitrogen atom to the phosphorus.

1/1

USSR

UDC 669.71'3.013.9

MUKHAMETOV, M. M.

"Study of Auto-ignition Temperature of Alloys in the System
Copper-Aluminum"

Probl. inzh. okhrany truda [Problems of Engineering Protection of Labor --
collection of works] (Moscow Institute of Steels and Alloys, 65), Moscow,
1970, 29-41, (Translated from Referativnyy Zhurnal Metallurgiya, No. 1,
1971, Abstract No.1 5155 by the author).

Translation: Alloys in the Al-Cu system, the surface of which is covered
with a film of Al oxides, ignite at temperatures corresponding to the
points of recrystallization, weakening of interatomic bonds, phase
conversion, and dissociation of one of the elements. 2 figures; 3 tables;
7 biblio. refs.

1/1

Nitrogen Compounds

USSR

UDC 547.292'464:547.415.1'821.3

SVETKIN, Yu. V., MUKHAMETOVA, D. Ya., and KOSYGIN, V. I., Bashkir State University of the 40th Anniversary of the October Revolution

"Synthesis and Some Properties of N,N'-Polymethylene-bis (2-chloroacetamides)"

Leningrad, Zhurnal Organicheskoy Khimii, Vol 7, No 6, Jun 71, pp 1159-1162

Abstract: N-Substituted chloroacetamides are used extensively as herbicides, defoliants, and bactericides. Furthermore, they serve as starting materials for the synthesis of compounds with local anesthetic, bactericidal, antifungal, oxytocic, and curariform activity. The following series of synthesis was carried out with the view of obtaining compounds with physiological activity. By reacting diamines with acetic-chloroacetic anhydride obtained from ketene and monochloroacetic acid, the N,N'-polymethylene-bis(2-chloroacetamides) $\text{ClCH}_2\text{CONH}(\text{CH}_2)_n\text{NHCOCH}_2\text{Cl}$ (I; $n = 2-10$) were prepared. The reaction of compounds I with diethylamine led to the formation of N,N'-bis (2-diethylaminoacetyl)- ω,ω' -polymethylenediamines $(\text{CH}_2)_n(\text{NHCOCH}_2\text{N}(\text{C}_2\text{H}_5)_2)_2$ (II; $n = 2-10$). Upon the reaction of compounds I with pyridine, the polymethylene - ω,ω' -bis/1-(2-amino-2-oxoethyl)pyridinium/chlorides $(\text{CH}_2)_n(\text{NHCOCH}_2\text{N}(\text{C}_5\text{H}_5)_2)_2\text{Cl}^-$ (III; $n = 2-10$) were obtained. The Cl content in compounds I could be determined by dissolving compounds III derived from them in H_2O and titrating the

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USSR

SVETKIN, Yu. V., et al, Zhurnal Organicheskoy Khimii, Vol 7, No 6, Jun 71, pp 1159-1162

Cl⁻ ions by the Mohr method. Isolation of compounds III for the determination of Cl in them was not necessary; compounds I were boiled with an excess of pyridine and, on evaporation of the unreacted pyridine, titration of Cl⁻ was carried out. Titration of Cl⁻ on conversion of Cl-containing pesticides into pyridinium chlorides forms a convenient method for the quantitative determination of these pesticides.

2/2

1/2 021 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--BEHAVIOR OF NITROALKYLNITROSAMINES DURING OXIDATION AND NITRATION
-U-
AUTHOR--(03)--YUKHAMEISHIN, F.N., FRIDMAN, A.L., NIKOLAYEVA, A.S.
COUNTRY OF INFO--USSR M
SOURCE--Zh. Org. Khim. 1970, 6(5), 928-9
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--AMINE DERIVATIVE, OXIDATION, NITRATION, SULFURIC ACID, NITRIC
ACID, NITROSAMINE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/1323 STEP NO--08/0366/70/006/005/0926/0929
CIRC ACCESSION NO--AP0134997
UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0134907

ABSTRACT/EXTRACT--(U) CP-0- ABSTRACT. THE REACTION OF UNN(CH SUB2 R) SUB2 (I) WITH 96PERCENT HNO SUB2, HNO SUB2-H SUB2 SO SUB4 MIXT., OR NITROUREA H SUB2 SO SUB4 MIXT. GAVE IS LESS THAN OR EQUAL TO 91PERCENT O SUB2 NN(CH SUB2 R) SUB2 (R IS C(NO SUB2) SUB3, C(NO SUB2) SUB2 CL, C(NO SUB2) SUB2 ME, OR CINO SUB2) SUB2 CH SUB2 CH SUB2 CO SUB2 ME). 1, IN CONTRAST TO UNSUBSTITUTED NITROSAMINES, ARE STABLE TOWARDS OF SUB3 CO SUB3 H.

UNCLASSIFIED

1/2 018 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--EFFECT OF THE NATURE OF SUBSTITUENTS ON THE FORMATION OF A
SYNONIMINE RING -U-
AUTHOR--(03)-MUKHAMETSHIN, F.M., FRIDMAN, A.L., NIKOLAYEVA, A.D.
COUNTRY OF INFO--USSR M
SOURCE--KHIM. GETEROTSIKL. SOEDIN. 1970, (1), 125
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CHEMICAL SUBSTITUENT, IMINE, ORGANIC NITRO COMPOUND,
HETEROCYCLIC BASE COMPOUND, CYANIDE, HYDROLYSIS, CHEMICAL REACTION
MECHANISM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1997/0744 STEP NO--UR/0409/70/000/001/0125/0125
CIRC ACCESSION NO--AP0119651
UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0119651

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. (O SUB2 N) SUB3 CCH SUB2 N(NO)CH SUB2 CH (I), M. 59-60DEGREES, AND (O SUB2 N) SUB2 C(CH SUB2 CH SUB2 N(NO)CH SUB2 CN) SUB2 (II), WERE PREPD. AND REACTED WITH HCL IN MEQH AT ODEGREES. THUS, II GAVE BISSYDMONIMINE (III), M. 217-18 (DECOMP.); WHERE I GAVE (O SUB2 N) SUB3 CCH SUB2 N(NO)CH SUB2 C(OME):NH.HCL (IV), M. 88-90DEGREES (DECOMP.). HYDROLYSIS OF IV GAVE (O SUB2 N) SUB3 CCH SUB2 N(NO)CH SUB2 CO SUB2 ME (V), M. 41-2DEGREES, WHICH WAS CONVERTED TO THE CORRESPONDING N,NITRO ACID (VI) VIA HNO SUB3 OXIDN. OF THE ESTER (V).

UNCLASSIFIED

Therapy

USSR

UDC 616-022.6

MUKHAMETZANOV, Sh. A., GLANTS, S. A., MAKARON, D. I., and KATS, A. S.

"Hemodialysis in Hemorrhagic Fever With a Renal Syndrome"

Kazan', Kazanskiy Meditsinskiy Zhurnal, No 6, 1971, pp 64-65

Abstract: Of 16 hemorrhagic fever patients admitted to the kidney centers in Kazan' and Chelyabinsk in fair condition with acute renal insufficiency, azotemia, acidosis, hyperhydration, neurologic and cardiovascular disturbances, and (in three cases) meningoencephalitic symptoms, six responded to the standard therapy and regained normal kidney function. The other 10 received as part of the therapy venovenous hemodialysis with an artificial kidney 1 to 5 times. Azotemia decreased markedly, the composition of the plasma salts returned to normal, and kidney function was completely restored in 2 to 12 days. The three patients with the meningoencephalitic syndrome died, despite the initial effectiveness of hemodialysis and elimination of uremic poisoning.

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USSR

UDC 542.91 661.718.1

D. YAKONOVA, N. I., ~~MUKHAMEDZANOVA, E. KH.~~, SHERMERGORN, I. M.,
Kazan' Institute of Veterinary Medicine imeni N. E. Bauman

"Organophosphorus Compounds with an α -Hydroxyalkyl and a Chloromethyl Radicals"

Leningrad, Zhurnal Obshchey Khimii, Vol 41, No 10, 1971,
pp 2203-2205

Abstract: In a search for biologically active compounds, a series of phosphine oxides and phosphinates were synthesized, which contained, simultaneously an α -hydroxyalkyl and chloromethyl radicals at the P atom. Bis-(chloromethyl) - α -hydroxyalkylphosphine oxides were obtained by the reaction of bis-(chloromethyl)- or (chloromethyl) ethyl-chlorophosphine with aldehydes or ketones and subsequent hydrolysis of intermediate products. Analogous reaction of (chloromethyl)phosphonous dichloride with benzaldehyde gave (chloromethyl)- α -hydroxybenzylphosphinic acid. Methyl (chloromethyl)- α -hydroxyalkylphosphinates were prepared by condensation of methyl (chloromethyl)hydrogenphosphinate with aldehydes. The yields, elemental analysis data, and mp of the 1/1 products are tabulated and preparation procedures used are given.

USSR

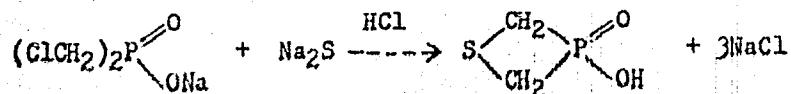
UDC 542.91+661.718.1

GILYAZOV, M. M., ZYABLIKOVA, T. A., ~~NIKHAMETZKYANOVA~~, E. Kh., SHERMERGORN, I. M.,
Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Academy of
Sciences, USSR

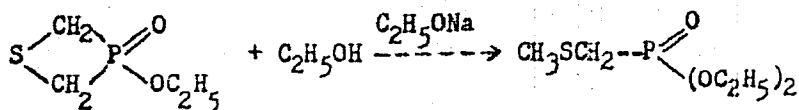
"Derivatives of 1,3-Thiaphosphetanes"

Moscow, Izvestiya Akademiyi Nauk SSSR, Seriya Khimicheskaya, No 5, May 70,
pp 1177-1180

Abstract: The reaction of the sodium salt of bis(chlormethyl)phosphinic acid
with sodium sulfide in aqueous solution in presence of HCl gave a good yield
of 3-oxo-3-hydroxy-1,3-thiaphosphetane;



The produce was easily esterified. Ring cleavage was observed:



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USSR

UDC 621.357.8.035.4:669.71

BOGOYAZLENSKIY, A. F., and MUKHAMEZYANOVA, L. N.

"A Study of the Properties of Anode Aluminum Oxides Obtained From the Salicylic-Oxalic Acid Electrolyte Using Tracer Techniques"

Tr. Kazan. aviats. in-ta (Works of the Kazan Aviation Institute) Vyp 148, 1972, pp 7-9 (from Referativnyy Zhurnal -- Khimiya, No 8(II), 1973, Abstract No 8I280)

Translation: The results are described for a study of the properties of the anode aluminum oxides obtained from the sulfosalicyl-oxalic acid electrolyte using tracer techniques. It was shown that the introduction of the sulfosalicylate ions into one of series is less than that of the oxalate ions. The introduction of the sulfosalicylate ions increases when the alloy metals DT-16 and AMGZ were used.

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- 23 -

USSR

UDC 576.895.4(575.3)

MUKHAMMADKULOV, M., Institute of Zoology and Parasitology imeni Academician
~~18. N. Pavlovskiy~~, Academy of Sciences Tadzhik SSR

"Wild Birds as Hosts of Argasid and Ixodid Ticks in Northern Tadzhikistan"

Dushanbe, Izvestiya Akademii Nauk Tadzhikskoy SSR, Otdeleniye Biologicheskikh
Nauk, No 3(40), 1970, pp 87-89

Abstract: In May-July 1969, 281 wild birds of 56 species were shot down in the Isfara region of Northern Tadzhikistan and examined for the presence of Argasid and Ixodes ticks. Only birds of nine species were found to harbor ticks of either subfamily. The ticks, which were all in pre-imago stages, apparently because of the season and mountainous nature of the country, belonged to three species only: *Argas persicus* (I), *Ixodes crenulatus* (II), and *Hyalomma plumbeum turanicum* (III). The species of birds on which the ticks were found and the species of ticks on them were as follows: *Dendrocopos bucotos* - II; *Lanius cristatus* - II; *Muscicapa striata* - III; *Sitta tephronota* - I, *Petronia petronia* - I, II; *Phoenicurus ochrurus* - III; *Oenanthe isabellina* - I; *Pastor roseus* - III; *Acridotheres tristis* - II.

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USSR

UDC 621.9.048.4:669.018.25

MUKHANOV, I. I., FILIMONENKO, V. N. and PIVOVAROV, B. Kh., Novosibirsk
Electrical Engineering Institute

"Physical and Mechanical Condition of the Surface Layer of Hard Alloy
Products After Electric Spark Treatment"

Kiev, Fiziko-Khimicheskaya Mekhanika Materialov, Vol 6, No 6, 1979, pp 3-6

Abstract: Results are presented from a study of the physical and mechanical state of the surface layer of hard alloy products made of alloys in group WC after treatment by electric spark tools operating in the RC generator mode. A metallographic study of the surface layer after electric spark treatment showed that there was a fused layer present, which arises even when there are no cracks on the surface. The fused layer is divided into two zones. The upper zone has a finely dispersed structure, resulting from rapid cooling of the fused alloy. The lower zone shows unmelted grains of tungsten carbide.

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1 1/2 010 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--COMPLEXING OF COPPER, II WITH 2, HYDROXYETHYL, IMINO, DIACETIC ACID -U-
AUTHOR--(02)-KCRNEV, V.I., MUKANOV, I.P.
COUNTRY OF INFO--USSR
SOURCE--ZH. NEORG. KHIM. 1970, 15(4), 1000-2
DATE PUBLISHED--70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--COPPER COMPLEX, ORGANOCOPPER COMPOUND, ACETIC ACID, HYDROXYL
RADICAL, CHEMICAL STABILITY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/2029 STEP NO--UR/0078/70/015/004/1000/1002
CIRC ACCESSION NO--AP0132286
UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0132286

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AT PH 2.5-3.0, CU(II) FORMS A 1:1
COMPLEX WITH ((2, HYDROXYETHYL)IMINO)DIACETIC ACID (H SUB2 L). THE
COMPLEX HAS AN INSTABILITY CONST. OF 1.0 TIMES 10 PRIME NEGATIVE11 AND
ACIDOLYSIS (CU PRIME2 POSITIVE PLUS H SUB2 L EQUALS CUL PLUS 2H PRIME
POSITIVE) CONST. OF 1.782 AND 1.662 AT 1 TIMES 10 PRIME NEGATIVE3 AND
7.5 TIMES 10 PRIME NEGATIVE4 M CU PRIME2 POSITIVE, RESP.
FACILITY: UDMURT. GOD. PEDAGOG. INST., IZHEVSK, USSR.

UNCLASSIFIED

1/2 021 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--CERTAIN FORMS OF DEFECTS IN PRESSINGS ORIGINATING FROM CASTING -U-
AUTHOR--(02)-TRUSOV, V.A., MUKHANDV, V.D.
COUNTRY OF INFO--USSR
SOURCE--TSVET. METALLY, FEB. 1970, (2), 59-60
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--METAL CASTING, COPPER, TIN ALLOY, ZINC ALLOY, VISUAL DEFECT,
CRYSTAL IMPURITY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/0194 STEP NO--UR/0136/70/000/002/0059/0060
CIRC ACCESSION NO--AP0123963
UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0123963

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. POSSIBLE CAUSES OF STRUCTURAL DEFECTS IN CU AND SN, ZN ALLOYS PRESSINGS (CRACK AND 'STAR' FORMATION) ARE DISCUSSED IN THE LIGHT OF PRACTICAL EXPERIENCE. MANY SUCH DEFECTS APPEAR TO BE DUE TO THE ORIGINAL CASTING CONDITIONS, WHICH, IN UNFAVOURABLE CASES, LEAD TO THE SEGREGATION OF IMPURITIES AND THE DEVELOPMENT OF COMPLEX LAMINATION EFFECTS. IN THE CASE OF CU, FOR EXAMPLE, THIS SOURCE OF DEFECT MAY BE ELIMINATED BY CHANGING THE MOULD GEOMETRY.

UNCLASSIFIED

USSR

UDC: 632.95

GVERDTSITELI, I. M., MUKHASHAVRIYA, A. L., TSIRGILADZE, T. V., ADAMIYA, S. V.,
TALIYA, D. P., TSINTSADZE, E. S., and KAPANADZE, G. G., Institute of Plant Pro-
tection, Academy of Sciences, Georgian SSR

"Study of the Toxicity of Certain Organotin Preparations for the European
Spruce Bark Beetle (*Dendroctonus micans* Kugel)"

K izucheniyu toksicheskikh svoystv nekotorykh olovoorganicheskikh preparatov
protiv bol'shogo yelovogo lubovoda (*Dendroctonus micans* Kugel) (cf. English
above), Tbilisi, 1970, 8 pp, bibliogr. 4 titles (from RZh-Khimiya, No 23, 10
Dec 70, Abstract No 23 N726 Dep)

Translation: The toxicity of some new organotin unsaturated alcohols was stu-
died under Georgian conditions. The preparations were effective in controlling
the European spruce bark beetle both in the laboratory and in the field.

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